UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,145	08/23/2001	Keiichi Takahashi	6340-000020	1715

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EXAMINER
PROCTOR, JASON SCOTT

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/938,145	TAKAHASHI ET AL.
	Examiner	Art Unit
	Jason Proctor	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>24 February 2005</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-35</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>24 February 2005</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claims 1-35 were presented for examination and rejected in office action mailed on October 25, 2004. Claims 1, 3-14, and 16-35 have been presented. Claims 1-35 have been submitted for reconsideration.

Claims 1-35 have been rejected.

Response to Objections to the Drawings

The Examiner thanks Applicant for amending the drawings to overcome the objections of the previous office action based on 37 CFR 1.84(l) regarding the weights of the lead lines. Those objections have been withdrawn.

The Examiner thanks Applicant for the remarks clarifying the limitation of a three-dimensional outer shape of a hollow container that is *defined* as a solid model that is at least partially filled with contents on the basis of a shape condition. The Examiner has considered these remarks and found them persuasive. Therefore the objections to the drawings under 37 CFR 1.83(a) as not showing all claimed elements are withdrawn.

Response to Objections to the Specification

The Examiner thanks Applicant for carefully reviewing the specification to comply with 35 U.S.C. § 112, first paragraph. Those objections to the specification have been withdrawn.

Response to Rejections under 35 U.S.C. § 101

The Examiner thanks Applicant for amending the limitations of claims 18 and 27 to establish

that statutory nature of the claimed invention. The rejections of claims 18-35 under 35 U.S.C. §

101 of the previous action have been withdrawn.

Response to Rejections under 35 U.S.C. § 112, second paragraph

Regarding the rejection of claims 1-35, the Examiner thanks Applicant for the amendments to

clarify and overcome the indefiniteness noted in the previous office action. The rejections of

claims 1-35 under 35 U.S.C. § 102 of the previous action have been withdrawn.

Response to Rejections under 35 U.S.C. § 102

Regarding the rejection of claims 1, 2, 4-6, 8, 10, 12-14, 16, 18, 19, 21-23, 25, 27, 28, 30-32, and

34 under 35 U.S.C. § 102(e) as being anticipated by PG Pub No. 2004/0085311 by Lee et al.

(Lee), Applicant argues primarily that:

> Referring to Claim 1, Lee et al. do not show, teach, or suggest a solid model definition module for defining
> a three-dimensional outer shape of a hollow container as a solid model that is at least partially filled with
> contents on the basis of a shape condition.

The Examiner has considered this argument and finds it persuasive. Lee does not show the

claimed limitation as amended. Lee shows the design of a hollow container, but does not show

the same filled with contents on the basis of a shape condition. The rejections of the claims

listed under 35 U.S.C. § 102(e) of the previous action have been withdrawn.

Applicant further argues that:

> Lee et al. use the specialized geometric object types on conjunction with containers to develop distinctive or functional surfaces on the containers. For example, Lee et al. do not teach inputting parametrically defined shape conditions in order to specify a desired capacity of a container as taught by Applicants. Therefore, a shape of a container is not automatically adjusted to maintain a predetermined capacity when a physical structure of the container is altered.

The Examiner respectfully traverses this argument as follows:

The Examiner thanks Applicant for this clarification of the teachings of the instant application, however these limitations are neither explicitly nor implicitly represented in claim 1 as argued by Applicant. Applicant appears to be referring to the essence of the limitations recited by claim 9, which was rejected under 35 U.S.C. § 103(a) as obvious over Lee in view of US Patent No. 5,864,777 to Smith et al. (Smith). Applicant has not specifically referred to the invention of claim 9 nor specifically addressed the teachings of the Smith patent. Applicants' arguments are therefore unpersuasive.

Outstanding Objections and Rejections

Claim Objections

1.   Several claims including at least claims 8 and 9 recite the phrase "a finish portion of said

hollow container". The Examiner presumes this is a minor grammatical oversight and should

read "a finish<u>ed</u> portion of said hollow container", however the specification and amendments

thereto also include the phrase "a finish portion". Correction or clarification is required.

Applicant is respectfully advised that the Examiner has not rejected claims containing this phrase

under 35 U.S.C. § 112, second paragraph, based on the presumption that the phrase is a minor

grammatical oversight.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1, 2, 4-6, 8, 10, 12-14, 16, 18, 19, 21-23, 25, 27, 28, 30-32, and 34 rejected under

35 U.S.C. 103(a) as being unpatentable over US PG Pub No. 2004/0085311 by Lee et al. (Lee) in

view of US Patent No. 6,437,784 to Bentley et al. (Bentley).

Regarding claim 1, Lee teaches a method and system for computer aided design for designing a

shape of a hollow container (paragraph 0002) comprising:

a parametric inputting means (paragraphs 0270-0271) for inputting a parametrically

defined shape condition (paragraphs 0036, 0100);

a storing means for storing said shape condition is implicit in that the invention is

embodied as a system for computer aided design (paragraph 0002);

a solid model defining means for defining a three-dimensional out shape of said hollow

container (paragraphs 0010, 0041, 0044); and

a solid model editing means for subjecting said solid model to a secondary processing

(paragraphs 0046, 0097, 0180, 0185, 0193, 0235).

Lee does not explicitly teach a "solid model definition module" for defining a three-

dimensional outer shape of said hollow container as a solid model "that is at least partially filled

with contents on the basis of said shape condition".

Bentley teaches a set of computer tools to generate representations of a three-dimensional

piece and produce a representation of a combination of such pieces in a container (column 1,

lines 50-54). Bentley teaches a "solid model definition module", referred to as *the bowl tool*

(column 5, lines 57-67), which fills the container with contents on the basis of the container's

shape condition (column 14, lines 7-35). Additionally, Bentley implicitly discloses modeling a

fluid, namely milk, in the container (column 2, lines 52-55; column 15, line 63 – column 16, line

2). Bentley explicitly teaches selecting from a number of containers (column 13, lines 8-9).

Bentley explicitly teaches the advantages of using the disclosed method (column 2, lines 31-43;

column 1, lines 11-21), generally described as "assessing consumer reaction to a proposed

product".

It would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention to combine the content-modeling feature taught by Bentley with the method and system for computer aided design for designing a shape of a hollow container as taught by Lee in order to assess consumer reaction to a proposed product or packaging design. As Bentley teaches selecting from a number of containers, the invention of Lee allows the designer to create new containers. The combination could be achieved by using the invention of Lee to define bowls to be used by the invention of Bentley, allowing a designer to assess the consumer reaction to a proposed product within the designed container rather than only in a bowl.

Regarding claim 2, Lee teaches that the solid model is subjected to a secondary processing after an outer shape of said hollow container is defined as a solid model (paragraphs 0046, 0105, 235-236).

Regarding claim 4, Lee teaches that the solid model editing means subjects said solid model to a secondary processing by using a fillet operation for smoothly rounding an intersecting portion of one plane with the other plane (paragraphs 0417-0418).

Regarding claim 5, Lee teaches that the solid model editing means subjects said solid model to a secondary processing by using a deformable operation for altering a plane such that a positive load or a negative load is applied to the plane (paragraph 0193; Fig. 9, 22, 23).

Regarding claim 6, Lee teaches that the solid model editing means subjects said solid model to a secondary processing by using a spiral operation for generating a continuous rugged shape on an exterior surface of said hollow container (paragraphs 0046, 0180; Fig. 24).

Regarding claim 8, Lee teaches that the solid model is subjected to secondary processing under the condition that a shape of a finished portion of said hollow container is fixed (paragraph 0046, 0096). Lee teaches that geometric constraint criteria can be applied to geometric objects while applying deformation operations to other objects (paragraph 0046).

3.   Claims 10, 12-14, and 16 are directed toward a container designing method using a computer which recite limitations corresponding to the container designing system using a computer of claims 1, 4-6, and 8, respectively. As the invention of Lee teaches a method for designing a container using a computer (paragraphs 0003, 0098), the limitations of claims 10, 12-14, and 16 are rejected for reasons corresponding to the rejections of claims 1, 4-6, and 8 given above.

4.   Claims 18-19, 21-23, and 25 are directed toward a container designing program for carrying out by a computer which recite limitations corresponding to the container designing system using a computer of claims 1-2, 4-6, and 8, respectively. As the invention of Lee is a computer program for designing a container (paragraphs 0003, 0098), the limitations of claims 18-19, 21-23, and 25 are rejected for reasons corresponding to the rejections of claims 1-2, 4-6, and 8 given above.

5.   Claims 27-28, 30-32, and 34 are directed toward a computer-accessible recording

medium recording a container designing program for carrying out by a computer which recite

limitations corresponding to the container designing system using a computer of claims 1-2, 4-6,

and 8, respectively. As the invention of Lee is a computer program for designing a container

(paragraphs 0003, 0098) and therefore stored on a computer-accessible medium, the limitations

of claims 27-28, 30-32, and 34 are rejected for reasons corresponding to the rejections of claims

1-2, 4-6, and 8 given above.

6.   Claims 3, 11, 20, and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over

Lee in view of Bentley as applied to claims 1, 10, 18, and 27, and further in view of US Patent

No. 6,654,654 to Subrahmanyam et al. (Subrahmanyam).

Regarding claim 3, Lee teaches that the solid model editing means subjects said solid

model to secondary processing by embedding one object model into another object model,

constituting a Boolean AND operation (paragraphs 0279, 0416). Lee does not specifically

disclose using Boolean operators for said secondary processing.

Subrahmanyam teaches a computer-implemented solid modeling system (column 2, lines

14-28) wherein Rib and Web features are created by using a union, subtraction, or intersection

operation (column 4, lines 25-51). Union, subtraction, and intersection operations are

functionally equivalent to Boolean operations OR, XOR, and AND respectively. It would have

been obvious to a person of ordinary skill at the time of applicant's invention to include tools and

methods known in the art of computer-implemented solid modeling to include tools performing

Boolean operations in the invention of Lee. Such a combination would better facilitate the

design of glass bottles, especially with regard to combining finely detailed portions of models

developed independently as disclosed by Lee (paragraph 0416). Such a combination could be

achieved by including the Boolean operation tools in the user interface of the invention of Lee

(paragraph 0255), providing the same functionality as disclosed by Subrahmanyam.

7.   Claim 11 is directed toward a container designing method using a computer which recites

limitations corresponding to the container designing system using a computer of claim 3. As the

invention of Lee teaches a method for designing a container using a computer (paragraphs 0003,

0098), the limitations of 11 are rejected for reasons corresponding to the rejections of claim 3

given above.

8.   Claim 20 is directed toward a container designing program for carrying out by a

computer which recites limitations corresponding to the container designing system using a

computer of claim 3. As the invention of Lee is a computer program for designing a container

(paragraphs 0003, 0098), the limitations of claim 20 are rejected for reasons corresponding to the

rejections of claim 3 given above.

9.   Claim 29 is directed toward a computer-accessible recording medium recording a

container designing program for carrying out by a computer which recites limitations

corresponding to the container designing system using a computer of claim 3. As the invention of Lee is a computer program for designing a container (paragraphs 0003, 0098) and therefore stored on a computer-accessible medium, the limitations of claim 29 are rejected for reasons corresponding to the rejections of claim 3 given above.

10.   Claims 7, 9, 15, 17, 24, 26, 33, and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Bentley as applied to claim 1 above, and further in view of US Patent No. 5,864,777 to Smith et al. (Smith).

Regarding claim 7, Lee teaches a capacity modulating means for performing a shape modulation upon said outer shape in order that a container capacity after a shape modulation has a capacity determined by said shape condition (paragraph 0046). While Lee teaches that geometric constructs may be constrained while the modeling system deforms other aspects of the model, it is not specifically disclosed that a shape modulation can be performed so that the final volume of the model matches a parametrically defined input.

Smith teaches a method of computer implemented modeling to predict the volume of combustion head chambers (column 1, lines 52-64). The invention receives a three dimensional model of the combustion chamber and calculates the volume (paragraph 5, lines 13-30). In the event that the calculated volume is not on target, the model is adjusted so that the calculated volume meets the predetermined target volume (column 5, line 52 – column 6, 2). Therefore, Smith teaches a shape modulation technique that produces a container with a capacity

determined by a previously known condition. It would have been obvious to a person of ordinary skill in the art of computer implemented modeling at the time of applicant's invention to use techniques known in the art to manage the volume of a bottle being designed, especially when the volume of a bottle is a critical design feature. The combination of the volume adjusting feature of Smith with the invention of Lee could be achieved by including a volume adjusting tool in the user interface of the invention of Lee (paragraph 0255), providing the same functional ability as taught by Smith.

Regarding claim 9, Lee teaches that the solid model is subjected to shape modulation upon said outer shape under the conditions that a shape of a finished portion of said hollow container is fixed (paragraph 0046, 0096). Lee teaches that geometric constraint criteria can be applied to geometric objects while applying deformation operations to other objects.

11.   Claims 15 and 17 are directed toward a container designing method using a computer which recite limitations corresponding to the container designing system using a computer of claims 7 and 9, respectively. As the invention of Lee teaches a method for designing a container using a computer (paragraphs 0003, 0098), the limitations of claims 15 and 17 are rejected for reasons corresponding to the rejections of claims 7 and 9 given above.

12.   Claims 24 and 26 are directed toward a container designing program for carrying out by a computer which recite limitations corresponding to the container designing system using a

computer of claims 7 and 9, respectively. As the invention of Lee is a computer program for designing a container (paragraphs 0003, 0098), the limitations of claims 24 and 26 are rejected for reasons corresponding to the rejections of claims 7 and 9 given above.

13.   Claims 33 and 35 are directed toward a computer-accessible recording medium recording a container designing program for carrying out by a computer which recite limitations corresponding to the container designing system using a computer of claims 7 and 9, respectively. As the invention of Lee is a computer program for designing a container (paragraphs 0003, 0098) and therefore stored on a computer-accessible medium, the limitations of 33 and 35 are rejected for reasons corresponding to the rejections of claims 7 and 9 given above.

Conclusion

Art considered pertinent by the examiner but not applied has been cited on form PTO-892.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jason Proctor whose telephone number is (571) 272-

3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Leo Picard can be reached at (571) 272-3749. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-3713.
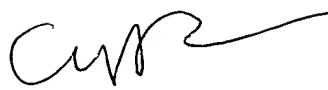
Any inquiry of a general nature or relating to the status of this application should

be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding

the status of an application may be obtained from the Patent Application Information

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9197 (toll-free).

Jason Proctor

Examiner
Art Unit 2123

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